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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,499	09/23/2003	Kyung-Chool Choi	45441	1923

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EXAMINER

SHAH, MANISH S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/667,499	Applicant(s) CHOI ET AL.	
	Examiner Manish S. Shah	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Muranaka (# US 6004052) and Richtsmeier et al. (# US 5420621).

AAPA discloses an ink jet printer including a print head forming an image by spraying ink from a nozzle towards a paper (element: 6, figure: 1-2); a transfer unit for transferring the paper towards the print head (figure: 1-2); a discharge/heater roller being in contact with a side of the paper opposite to a side with image formed thereon by the print head for drying ink, and for discharging the paper; wherein the discharge /heater roller includes a heat conductive cylinder portion; a heat generator disposed on an inner surface of the cylinder portion in an axial direction (element: 8, figure: 2). They also discloses that the discharge/heater roller is disposed close to the print head (figure: 2).

AAPA differs from the claim of the present invention is that the (1) one or more supporting rolls located above the discharge/heater roller for discharging paper together with the discharge/heater roller, wherein supporting roller

Art Unit: 2853

including a star wheel for minimizing a spread of ink of the image on the paper.

(2) The discharge/heater roller includes a roller rubber covering the cylindrical portion and generating a friction force during the discharging paper portion, wherein the cylindrical portion is formed of aluminum, and wherein the roller rubber is formed of material, which is heat resistant with respect to a predetermined temperature transmitted from the heat generator.

Richtsmeier et al. teaches that to get the printed image without damaging the quality of printed image, which could be graphics, text or combination (column: 1, line: 45-51), inkjet printer includes one or more supporting rolls (element: 28, figure: 1) located above the discharge roller (element: 26, figure: 1) for discharging paper together with the discharge roller, wherein supporting roller including a star wheel for minimizing a spread of ink of the image on the paper (element: 28, figure: 1, 4-5; column: 1, line: 55-65; column: 3, line: 40-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet printer of AAPA by the aforementioned teaching of Richtsmeier et al. in order to get the printed image without damaging the quality of printed image, which could be graphics, text or combination.

Muranaka teaches that to remove the moisture and feed and discharge the sheet smoothly, ink jet printer includes the heater roller includes a roller rubber (elastic, silicone rubber) (element: 12, figure: 2, 5) covering the cylindrical portion (element: 11, 26, figure: 2, 5) and generating a friction force during the discharging paper portion (column: 4, line: 18-25), wherein the cylindrical portion

Art Unit: 2853

is formed of aluminum (column: 4, line: 10-15), and wherein the roller rubber is formed of material, which is heat resistant with respect to a predetermined temperature transmitted from the heat generator (column: 4, line: 7, line: 1-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge roller (element: 8; figure: 2) of inkjet printer of AAPA by the aforementioned teaching of Muranaka in order to remove the moisture from the printing medium, which gives the high quality printed image.

2. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Richtsmeier et al. (# US 5420621) and Kashiwagi (# US 5111250).

AAPA discloses an ink jet printer including a print head forming an image by spraying ink from a nozzle towards a paper (element: 6, figure: 1-2); a transfer unit for transferring the paper towards the print head (figure: 1-2); a discharge/heater roller being in contact with a side of the paper opposite to a side with image formed thereon by the print head for drying ink, and for discharging the paper; wherein the discharge /heater roller includes a heat conductive cylinder portion; a heat generator disposed on an inner surface of the cylinder portion in an axial direction (element: 8, figure: 2). They also discloses that the discharge/heater roller is disposed close to the print head (figure: 2).

AAPA differs from the claim of the present invention is that (1) the discharge/heater roller includes a roller rubber covering the cylindrical portion and generating a friction force during the discharging paper portion, wherein the

Art Unit: 2853

cylindrical portion is formed of aluminum, and wherein the roller rubber is formed of material, which is heat resistant with respect to a predetermined temperature transmitted from the heat generator. (2) The heater generator includes a heater coil formed of nichrome wire.

Muranaka teaches that to remove the moisture and feed and discharge the sheet smoothly, ink jet printer includes the heater roller includes a roller rubber (elastic, silicone rubber) (element: 12, figure: 2, 5) covering the cylindrical portion (element: 11, 26, figure: 2, 5) and generating a friction force during the discharging paper portion (column: 4, line: 18-25), wherein the cylindrical portion is formed of aluminum (column: 4, line: 10-15), and wherein the roller rubber is formed of material, which is heat resistant with respect to a predetermined temperature transmitted from the heat generator (column: 4, line: 7, line: 1-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge roller (element: 8; figure: 2) of inkjet printer of AAPA by the aforementioned teaching of Muranaka in order to remove the moisture from the printing medium, which gives the high quality printed image.

Kashiwagi teaches that to heat the recording medium, the heater generator includes a heater coil formed of nichrome wire (column: 1, line: 15-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge roller (element: 8; figure: 2) of inkjet printer of AAPA by the aforementioned teaching of Kashiwagi in order to get smooth and effective fixing printed image, which gives the high quality printed image.

Art Unit: 2853

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Muranaka (# US 6004052) and Richtsmeier et al. (# US 5420621) as applied to claims 1-5 above, and further in view of Kashiwagi (# US 5111250).

AAPA, Muranaka and Richtsmeier et al. teaches all the limitations of the present invention except that the heater generator includes a heater coil formed of nichrome wire.

Kashiwagi teaches that to heat the recording medium, the heater generator includes a heater coil formed of nichrome wire (column: 1, line: 15-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the discharge roller (element: 8; figure: 2) of inkjet printer of AAPA by the aforementioned teaching of Kashiwagi in order to get smooth and effective fixing printed image, which gives the high quality printed image.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Manish S. Shah
Primary Examiner
Art Unit 2853

MSS

8/4/05